## AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows:

## 1-19. (Cancelled)

- 20. (Previously Presented) An apparatus for adaptively generating an output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia wherein the apparatus further comprises a discrete controller circuit that has a controller gain that is adapted in a fixed range as a function of adaptive parameter data and further comprises an actuator, and wherein the output comprises a controlled electric current coupled to the actuator.
- 21. (Previously Presented) The apparatus of Claim 20 further comprising:
  - an adaptive system generating the adaptive parameter data according to an update equation.
- 22. (Previously Presented) The apparatus of Claim 21 wherein the adaptive system generates the adaptive parameter data based on both the torque and the inertia.
- 23-24. (Cancelled)
- 25. (Currently Amended) The apparatus of Claim 420 wherein the controlled electric current is controlled by pulse width modulation.
- 26. (Currently Amended) The apparatus of Claim 420 wherein the <u>discrete</u> controller circuit further comprises a digital-to-analog converter providing the controlled electric current.
- 27. (Currently Amended) The apparatus of Claim 420 wherein the sensed position signal is derived from a read/write head.

28. (Previously Presented) An apparatus comprising:

adaptive parameter data based on at least one of a torque and an inertia; and

- a controller circuit for receiving a sensed position signal sensed by a read/write head and adapted to receive reference data indicating a desired position, for adaptively generating an output which is based on the adaptive parameter data, the controller circuit providing a controller gain that is adapted in a fixed range as a function of adaptive parameter data.
- 29. (Previously Presented) The apparatus of Claim 28 wherein the controller circuit comprises first and second controllers that are stable.
- 30. (Previously Presented) The apparatus of Claim 29 wherein the first and second controllers use an error model.

## 31. (Cancelled)

- 32. (Previously Presented) A method comprising the steps of adaptively generating a controlled electric current output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia and providing a controller gain that is adapted in a fixed range as a function of adaptive parameter data, and coupling the controlled electric current output to an actuator.
- 33. (Previously Presented) The method of Claim 32 wherein the output is controlled based on adaptive parameter data.
- 34. (Previously Presented) The method of Claim 33 wherein the adaptive parameter data is updated based on at least one of a torque and an inertia.

- 35. (Previously Presented) A method comprising the step of adaptively generating an output responsive to a sensed position signal, a desired position signal and at least one of a torque and an inertia, wherein the output is controlled based on adaptive parameter data that is updated based on at least one of a torque and an inertia, and wherein adaptive parameter data is updated digitally in real time using instructions stored in a computer readable program storage device.
- 36. (Previously Presented) The method of Claim 35 wherein the output is coupled to a voice coil motor in a disc drive.